



SEQUENCE LISTING

<110> BAVYKIN, SERGEI G.
MIRZABEKOV, ANDREI D.

<120> DISCRIMINATION OF BACILLUS ANTHRACIS FROM CLOSELY
RELATED MICROORGANISMS BY ANALYSIS OF 16S AND 23S rRNA
WITH OLIGONUCLEOTIDE MICROCHIPS

<130> 21416-94731

<140> 10/647,423

<141> 2003-08-25

<150> 10/287,455

<151> 2002-11-11

<150> 10/212,476

<151> 2002-08-05

<150> 09/261,115

<151> 1999-03-03

<150> 08/780,026

<151> 1996-12-23

<160> 175

<170> PatentIn Ver. 3.2

<210> 1

<211> 18

<212> DNA

<213> Bacillus anthracis

<400> 1

taagagcttg ctcttatg

18

<210> 2

<211> 18

<212> DNA

<213> Bacillus cereus

<400> 2

taagagcttg ctcttatg

18

<210> 3

<211> 18

<212> DNA

<213> Bacillus cereus

<400> 3

taagagcttg ctcttatg

18

<210> 4
 <211> 18
 <212> DNA
 <213> *Bacillus thuringiensis*

<400> 4
 taagagcttg ctcttatg 18

<210> 5
 <211> 18
 <212> DNA
 <213> *Bacillus thuringiensis*

<400> 5
 tgagagcttg ctctcaag 18

<210> 6
 <211> 18
 <212> DNA
 <213> *Bacillus mycoides*

<400> 6
 taagagcttg ctcttatg 18

<210> 7
 <211> 18
 <212> DNA
 <213> *Bacillus mycoides*

<400> 7
 taagagcttg ctcttatg 18

<210> 8
 <211> 30
 <212> DNA
 <213> *Bacillus anthracis*

<400> 8
 aacattttga accgcatggt tcgaaattga 30

<210> 9
 <211> 30
 <212> DNA
 <213> *Bacillus cereus*

<400> 9
 aacattttga accgcatggt tcgaaattga 30

<210> 10
 <211> 30
 <212> DNA
 <213> *Bacillus cereus*

<400> 10
aacattttga accgcatggt tcgaaattga 30

<210> 11
<211> 30
<212> DNA
<213> *Bacillus thuringiensis*

<400> 11
aacattttga actgcatggt tcgaaattga 30

<210> 12
<211> 30
<212> DNA
<213> *Bacillus thuringiensis*

<400> 12
aacattttga actgcatggt tcgaaattga 30

<210> 13
<211> 30
<212> DNA
<213> *Bacillus mycoides*

<400> 13
aatattttga actgcatagt tcgaaattga 30

<210> 14
<211> 30
<212> DNA
<213> *Bacillus mycoides*

<400> 14
aacattttgc accgcatggt gcgaaattca 30

<210> 15
<211> 33
<212> DNA
<213> *Bacillus anthracis*

<400> 15
acaaccctag agatagggt tctccttcgg gag 33

<210> 16
<211> 33
<212> DNA
<213> *Bacillus cereus*

<400> 16
acaaccctag agatagggt tctccttcgg gag 33

<210> 17
 <211> 33
 <212> DNA
 <213> *Bacillus cereus*

<400> 17
 aaaaccctag agatagggct tctccttcgg gag 33

<210> 18
 <211> 33
 <212> DNA
 <213> *Bacillus thuringiensis*

<400> 18
 aaaaccctag agatagggct tctccttcgg gag 33

<210> 19
 <211> 33
 <212> DNA
 <213> *Bacillus thuringiensis*

<400> 19
 aaaaccctag agatagggct tctccttcgg gag 33

<210> 20
 <211> 33
 <212> DNA
 <213> *Bacillus mycoides*

<400> 20
 aaaactctag agatagagct tctccttcgg gag 33

<210> 21
 <211> 33
 <212> DNA
 <213> *Bacillus mycoides*

<400> 21
 acaaccctag agatagggct tccccttcgg ggg 33

<210> 22
 <211> 18
 <212> DNA
 <213> *Bacillus anthracis*

<400> 22
 taagagcttg ctcttatg 18

<210> 23
 <211> 18
 <212> DNA

<213> *Bacillus thuringiensis*

<400> 23

taagagcttg ctcttatg

18

<210> 24

<211> 18

<212> DNA

<213> *Bacillus cereus*

<400> 24

taagagcttg ctcttatg

18

<210> 25

<211> 18

<212> DNA

<213> *Bacillus cereus*

<400> 25

taagagcttg ctcttatg

18

<210> 26

<211> 18

<212> DNA

<213> *Bacillus thuringiensis*

<400> 26

tgagagcttg ctctcaag

18

<210> 27

<211> 18

<212> DNA

<213> *Bacillus medusa*

<400> 27

tgagagcttg ctctcaag

18

<210> 28

<211> 18

<212> DNA

<213> *Bacillus mycoides*

<400> 28

taagagcttg ctcttatg

18

<210> 29

<211> 18

<212> DNA

<213> *Bacillus mycoides*

<400> 29

taagagcttg ctcttatg

18

<210> 30
<211> 30
<212> DNA
<213> *Bacillus anthracis*

<400> 30
aacattttga accgcatggt tcgaaattga 30

<210> 31
<211> 30
<212> DNA
<213> *Bacillus thuringiensis*

<400> 31
aacattttga accgcatggt tcgaaattga 30

<210> 32
<211> 30
<212> DNA
<213> *Bacillus cereus*

<400> 32
aacattttga accgcatggt tcgaaattga 30

<210> 33
<211> 30
<212> DNA
<213> *Bacillus cereus*

<400> 33
aacattttga accgcatggt tcgaaattga 30

<210> 34
<211> 30
<212> DNA
<213> *Bacillus thuringiensis*

<400> 34
aacattttga actgcatggt tcgaaattga 30

<210> 35
<211> 30
<212> DNA
<213> *Bacillus medusa*

<400> 35
aacattttga accgcatggt tcgaaattga 30

<210> 36
<211> 30
<212> DNA

<213> *Bacillus mycoides*

<400> 36

aacattttgc accgcatggt gcgaaattca

30

<210> 37

<211> 30

<212> DNA

<213> *Bacillus mycoides*

<400> 37

aacattttgc accgcatggt gcgaaattca

30

<210> 38

<211> 33

<212> DNA

<213> *Bacillus anthracis*

<400> 38

acaaccctag agatagggt tctccttcgg gag

33

<210> 39

<211> 33

<212> DNA

<213> *Bacillus thuringiensis*

<400> 39

acaaccctag agatagggt tctccttcgg gag

33

<210> 40

<211> 33

<212> DNA

<213> *Bacillus cereus*

<400> 40

aaaaccctag agatagggt tctccttcgg gag

33

<210> 41

<211> 33

<212> DNA

<213> *Bacillus cereus*

<400> 41

aaaaccctag agatagggt tctccttcgg gag

33

<210> 42

<211> 33

<212> DNA

<213> *Bacillus thuringiensis*

<400> 42

aaaaccctag agatagggt tctccttcgg gag

33

<210> 43
 <211> 33
 <212> DNA
 <213> *Bacillus medusa*

<400> 43
 aaaaccctag agatagggct tctccttcgg gag 33

<210> 44
 <211> 33
 <212> DNA
 <213> *Bacillus mycoides*

<400> 44
 acaaccctag agatagggct tccccttcgg ggg 33

<210> 45
 <211> 33
 <212> DNA
 <213> *Bacillus mycoides*

<400> 45
 acaaccctag agatagggct tccccttcgg ggg 33

<210> 46
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 46
 gagcgaatgg attaagagct 20

<210> 47
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 47
 gagcgaatgg attgagagct 20

<210> 48
 <211> 20
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 48

agcttgctct tatgaagtta

20

<210> 49

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 49

agcttgctct caagaagtta

20

<210> 50

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 50

tgctcttatg aagtttagcgg

20

<210> 51

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 51

tgctctcaag aagtttagcgg

20

<210> 52

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 52
cattttgaac cgcatgggttc 20

<210> 53
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 53
cattttgaac tgcattgggttc 20

<210> 54
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 54
cattttgaac cgcatgggttc 20

<210> 55
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 55
cattttgcac cgcatgggtgc 20

<210> 56
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 56
aaccgcatgg ttcgaaattg 20

<210> 57
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 57
caccgcatgg tgcgaaattc 20

<210> 58
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 58
atggttcgaa attgaaaggc 20

<210> 59
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 59
atggtgcgaa attcaaaggc 20

<210> 60
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 60
gaaattgaaa ggcggcttcg 20

<210> 61
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 61
 gaaattcaaa ggcggcttcg 20

<210> 62
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 62
 catcctctga caaccctaga 20

<210> 63
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 63
 catcctctga aaaccctaga 20

<210> 64
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 64
 gcttctcctt cgggagcaga 20

<210> 65
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 65
 gcttcccctt cgggggcaga 20

<210> 66
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 66
 ttatcgtgaa ggctgagctg 20

<210> 67
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 67
 ttatcgtaaa ggctgagctg 20

<210> 68
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 68
 tgataccaat ggtatcagtg 20

<210> 69
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 69
 tgataccgaa tggtatcagt g 21

<210> 70
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 70
 agctcttaat ccattcgctc 20

 <210> 71
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 71
 agctctcaat ccattcgctc 20

 <210> 72
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 72
 taacttcata agagcaagct 20

 <210> 73
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 73
 taacttcttg agagcaagct 20

 <210> 74
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 74
 ccgctaactt cataagagca 20

<210> 75
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 75
ccgctaactt cttgagagca 20

<210> 76
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 76
gaaccatgcg gttcaaaatg 20

<210> 77
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 77
gaaccatgca gttcaaaatg 20

<210> 78
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 78
gaaccatgcg gttcaaaatg 20

<210> 79
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 79
gcaccatgcg gtgcaaaatg 20

<210> 80
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 80
caatttcgaa ccatgcggtt 20

<210> 81
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 81
gaatttcgca ccatgcggtg 20

<210> 82
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 82
gcctttcaat ttcgaaccat 20

<210> 83
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 83
gcctttgaat ttcgcaccat 20

<210> 84
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 84
cgaagccgcc tttcaatttc 20

<210> 85
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 85
cgaagccgcc tttgaatttc 20

<210> 86
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 86
tctagggttg tcagaggatg 20

<210> 87
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 87
tctagggttt tcagaggatg 20

<210> 88
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 88
tctgctcccg aaggagaagc 20

<210> 89
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 89
tctgcccccg aaggggaagc 20

<210> 90
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 90
cagctcagcc ttcacgataa 20

<210> 91
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 91
cagctcagcc tttacgataa 20

<210> 92
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 92
cactgatacc attggtatca 20

<210> 93
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 93
cactgatacc attcggatc a 21

<210> 94
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 94
cggctcttgca gctctttgta 20

<210> 95
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 95
attccagctt cacgcagtc 19

<210> 96
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 96
gtttgacccg ggctcag 17

<210> 97
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 97
 ccagtcttat ggcaggtta c 21

<210> 98
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 98
 tccataagtg acagccgaag c 21

<210> 99
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 99
 ctacgggagg cagcagtggg 20

<210> 100
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 100
 gwattaccgc ggckgctg 18

<210> 101
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 101
 ggattagata ccctggtagt 20

<210> 102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 102
ccgtcaattc ctttraggtt 20

<210> 103
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 103
ttcgggagca gaggacagg t 21

<210> 104
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 104
tacacaccgc ccgtcacacc a 21

<210> 105
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 105
rgtgagctrt tacgc 15

<210> 106
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 106
 ccgaatgggg vaaccc 16

<210> 107
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 107
 ccgtttcgct cgccgctact c 21

<210> 108
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 108
 tagtgatcga tagtgaacca g 21

<210> 109
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 109
 cattmtacaa aaggyacgc 19

<210> 110
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 110
 gcgtrccttt tgtakaatg 19

<210> 111
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 111
 tagtgatcga tagtgaacca g 21

<210> 112
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 112
 tagtgatcga tagtgaacca g 21

<210> 113
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 113
 rgtgagctr t tacgc 15

<210> 114
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 114
 wgcgtaayag ctcac 15

<210> 115
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 115

cataccggca ttctcacttc

20

<210> 116

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 116

acaggcgtag gcgatggac

19

<210> 117

<211> 17

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 117

aacctttggg cgcctcc

17

<210> 118

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 118

cyacctgtgw cggttt

16

<210> 119

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 119

aaaccgwcac aggtrg

16

<210> 120
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 120
 caygggtct ttrcgtc

17

<210> 121
 <211> 17
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 121
 gacgyaaaga cccrctg

17

<210> 122
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 122
 gagycgacat cgagg

15

<210> 123
 <211> 15
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 123
 cctcgatgtc grctc

15

<210> 124
 <211> 14
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 124
 gyttgatgc yttc 14

 <210> 125
 <211> 19
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 125
 ggcggcggtcc tactctcac 19

 <210> 126
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 126
 tttgggctat gttccgtttc 20

 <210> 127
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 127
 tttgggctag attccgtttc 20

 <210> 128
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

 <400> 128
 tacgggggttg ttaccctcta 20

<210> 129
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 129
tacgggggta ttaccctcta 20

<210> 130
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 130
ctacgggggtt gttaccctct 20

<210> 131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 131
ctacgggggtt attaccctct 20

<210> 132
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 132
tcttatgggc aggttaccca 20

<210> 133
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 133
 tcttatgggt aggttaccca 20

<210> 134
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 134
 acgcatcggt gccttggtga 20

<210> 135
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 135
 acgcatcgtc gccttggtga 20

<210> 136
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 136
 catcgttgcc ttggtgagcc 20

<210> 137
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 137
 catcgtcgcc ttggtgagcc 20

<210> 138
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 138
gcggctggct ccaaaaaggt 20

<210> 139
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 139
gcggctggct ccataaaggt 20

<210> 140
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 140
ggctggctcc aaaaagggtta 20

<210> 141
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 141
ggctggctcc ataaagggtta 20

<210> 142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 142
 ccctctacga cggacctttc 20

<210> 143
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 143
 ccctctgtga cgagcctttc 20

<210> 144
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 144
 tttccaggtc gcttcgtcta 20

<210> 145
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 145
 tttccaggct gcttcgtcta 20

<210> 146
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 146
 ccggtttcaa aggctccgc 20

<210> 147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 147
ccggcttcaa tggctccgc

20

<210> 148
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 148
gacccttagt ccaatcagtg

20

<210> 149
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 149
gacccttagt tcaatcagtg

20

<210> 150
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 150
ggtatcaatc cgcagcttcg

20

<210> 151
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 151
 ggtatcaatt cgcagcttcg 20

<210> 152
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 152
 acttctaagc actccaccag 20

<210> 153
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 153
 acttctaagc gctccaccag 20

<210> 154
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 154
 tcacttctaa gcactccacc 20

<210> 155
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 155
 tcacttctaa gcgctccacc 20

<210> 156
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 156
atgtattcag ataaggatac 20

<210> 157
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 157
atgtattcag gtaaggatac 20

<210> 158
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 158
ataccattgg tatcaatccg 20

<210> 159
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 159
taccattcgg tatcaatccg 20

<210> 160
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 160
taccattggt atcaatccgc 20

<210> 161
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 161
accattcggt atcaatccgc 20

<210> 162
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 162
gctcagcctt cacgataagc 20

<210> 163
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 163
gctcagcctt tacgataagc 20

<210> 164
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 164
gaaccatgcy gttcaaaatg 20

<210> 165
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 165
cattacgtat ggtgggtttc 20

<210> 166
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 166
cattacgtat agtgggtttc 20

<210> 167
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 167
tctgtcttcc ttaccctatg 20

<210> 168
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 168
tctgtcttcc ataccctatg 20

<210> 169
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 169
 gccatcaccc gttaacgggc 20

<210> 170
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 170
 gccatcaccc attaacgggc 20

<210> 171
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 171
 acgccatcac ccgttaacgg 20

<210> 172
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 172
 acgccatcac ccattaacgg 20

<210> 173
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 oligonucleotide

<400> 173
 caactagcac ttgttcttcc 20

<210> 174
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 174
acagatttgt gggattggct

20

<210> 175
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 175
gatgatgatg atgatgatga

20